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10/517,866	09/19/2005	Hirohisa Suwabe	Q76046	2732
23373 7590 06/09/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER GUGLIOTTA, NICOLE T				
ART UNIT		PAPER NUMBER		
1794				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,866

Applicant(s)

SUWABE ET AL.

Examiner

NICOLE T. GUGLIOTTA

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 23 - 26, 28 - 53 is/are pending in the application.
- 4a) Of the above claim(s) 23 - 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 28 - 53 is/are rejected.
- 7) ☒ Claim(s) 1, 38, 43, 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Examiner's Note

1. This action is Non-final due to the addition of new grounds of rejection under 35 USC §112, which were not present in the previous action.
2. Examiner acknowledges the cancellation of claims 2 – 22, the amendment to claim 1, and the addition of claims 28 – 53 on August 11, 2009. In addition, acknowledgement is made on September 12, 2009 in regard to the amendments to the claim and previous remarks. *To summarize the present claims status, claims 1, 23 – 26, 28 – 53 are currently pending. Claims 23 – 26 are withdrawn due to non-elected claims. Claims 1 & 28 - 53 are currently addressed.*

Claim Objections

3. Claims 1, 38, 43 & 52 are objected to because of the following informalities: Examiner prefers the removal of pronouns (i.e. "its") from the claim language. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1, 38, 43 & 52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regard to claim 1, it is unclear what the limitation "constituting a larger number of flow paths

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inside said grooves" means. First, "larger" is a relative term. Examiner is unclear what comparisons are being made by the use of the word "larger". Second, how are there flow paths inside of said grooves? Are the flow paths the same as the voids ("stress release portions" between the peripheral wall and grooves?

Applicant's invention is a groove filled with the coating of the replacement peripheral wall. Therefore there are no flow paths inside said grooves. Claims 28 – 37, 39 – 42, 44 – 51 are dependent upon claims 1, 38, 43 or 52. Therefore these claims are also rejected.

6. Based upon the present disclosure by Applicant, Examiner is unable to understand what is meant by "larger number of flow paths inside said grooves" for this limitation to be sufficiently examined. Therefore, Examiner has omitted addressing this limitation until clarification is made.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 43 defines the product by how the product was made (i.e. firing the honeycomb body after removal of the peripheral wall). Thus, claim 43 is a product-by-process claim. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having a peripheral wall covering the axial grooves of a honeycomb body by first the removal of a peripheral wall. The references cited below suggest such a product.

Examiner refers applicant to MPEP § 2113 [R - 1] regarding product-by-process claims. "The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product or the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777, F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citation omitted)

Once the examiner provides a rationale tending to show that the claimed product appears to be same or similar to that of the prior art, although produced by a different process, the burden shifts to the applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218, USPQ 289, 292 (Fed. Cir. 1983)

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9. Claim 43 is rejected under 35 U.S.C. 102(b) as being anticipated by Horikawa (EP 0449 556 A1 (equivalent to JP 2,604,876 cited by Applicants in their specification)).

10. In regard to claims 43, Horikawa et al. disclose a ceramic honeycomb with an outer coating wall formed around an outer peripheral surface of a fired honeycomb body (Page 3, Line 41). The ceramic honeycomb is fired before removing the peripheral portion (Page 3, Lines 33 - 35).

11. Claim 43 is rejected under 35 U.S.C. 102(b) as being anticipated by Kotani et al. (U.S. 5,629,067).

12. Kotani et al. disclose

The outer coating 16 thus formed on the outer surface of the honeycomb body 14 is then dried or fired as needed depending upon the kind of the coating material used, whereby the outer coating 16 is secured to the ceramic honeycomb body 14. In this connection, the honeycomb body 14 may be fired upon the firing of the outer coating 16 (Col. 8, Lines 31 - 36).

13. The outer coating 16 is formed to replace the removed peripheral wall (Col. Col. 5, Line 60 - Col. 6, Line 46). Therefore, Kotani et al. disclose firing the honeycomb body after the removal of a peripheral wall.

14. Claim 43 rejected under 35 U.S.C. 102(e) as being anticipated by Suwabe et al. (US 2003/0093982)

15. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C.

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102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

16. Suwabe et al. disclose a cordierite honeycomb sintered body is manufactured and

The sintered body is machined to remove its periphery was coated with slurry comprising 100 parts by mass of a cordierite aggregate having an average particle size of 15 μm , 10 parts by mass of colloidal silica, a binder and water on an outer periphery surface thereof, to form an outer peripheral wall [0136].

17. Suwabe et al. disclose the periphery is removed between two sintering (firing) steps. By removing the periphery before the second sintering step, the disclosure is commensurate with Applicant's claim limitation “removing a peripheral wall and nearby cell walls before firing.” Applicant's claim does not limit sintering to after firing only.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1, 33 – 35, 43, 45, 47, 48, & 50 are rejected under 35

U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Horikawa (EP 0449 556 A1).

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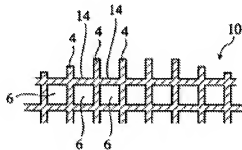
Note: EP 0449 556 A1 is equivalent to JP 2,604,876, which was cited by Applicants in their specification.

MPEP 2112 [R-3] states:

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

20. Applicant notes on page 15 of their specification a coated material for an outer wall of a ceramic honeycomb having a viscosity of 20,000cP or more will form voids in the grooves. Applicant illustrates the meaning of a groove **14** in Figure 2, shown below:

Fig. 2



In regard to claims 1, 33, & 45, Horikawa et al. disclose an outer coating applied to the peripheral surface of a ceramic honeycomb in which the outer wall has been removed by grinding (Page 3, Lines 40 – 44).

Removal of the outer wall, as disclosed by Horikawa et al., creates the presence of grooves along the periphery of the honeycomb. Grooves are the area between cell walls on the outer peripheral surface of a honeycomb in which

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at least one wall of the cell has been removed as a result of grinding away the original extruded outer wall of the honeycomb. (See Applicant's **14** in Figure 2 shown above for an illustration of a "groove").

Horikawa et al. disclose the viscosity of the coating material applied to the peripheral surface is 100 – 200 poises (10,000 – 20,000 cp). When the coating viscosity is greater than 200 poises it is likely that the coating material is not uniformly spread over the outer periphery of the structural body (Page 4, Lines 6 - 10).

First, as Applicant has noted, a viscosity of 20,000 cp will form voids ("stress release portions"). Horikawa et al. disclose a coating material for a periphery of a honeycomb of 20,000 cp and more. Second, although above 20,000 poises is not the most preferred embodiment of Horikawa et al., Horikawa et al. teaches, as discussed above, that it should be expected to have a non-uniform spread over the outer periphery at higher viscosities. It would be reasonable to believe a non-uniform spread of a coating, which has the same viscosity as the coating disclosed by Applicant, would also create voids when applied to the peripheral surface of a honeycomb comprising grooves. Applicant has referred to these voids as their "stress release portions". Therefore, Applicant's honeycomb comprising stress release portions (voids) between the peripheral wall and the grooves is implicitly taught by Horikawa et al. and is therefore anticipated.

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21. In regard to claims 34, Horikawa et al. disclose an outer coating applied to the periphery of a honeycomb. The outer coating has the same viscosity as the coating disclosed by Applicant. One of ordinary skill in the art would expect a coating of similar viscosity to fill the grooves of a honeycomb to the same extent. Therefore, it would be reasonable to believe greater than 5% of the total number of grooves in the honeycomb will also contain voids.

22. In regard to claim 35, Horikawa et al. disclose an outer coating applied to the periphery of a honeycomb. The outer coating has the same viscosity as the coating disclosed by Applicant. One of ordinary skill in the art would expect a coating of similar viscosity to fill the grooves of a honeycomb to the same extent. Therefore, it would be reasonable to believe 95% or less of the length of the groove is in contact with the outer coating (peripheral wall layer).

23. Claim 47 defines the product by how the product was made (i.e. firing the honeycomb body before or after removal of the peripheral wall). Thus, claim 43 is a product-by-process claim. For purposes of examination, product-by-process claims are not limited to the manipulation of the recited steps, only the structure implied by the steps. See MPEP 2113. In the present case, the recited steps imply a structure having a peripheral wall covering the axial grooves of a honeycomb body by first the removal of a peripheral wall. The reference suggests such a product.

Examiner refers applicant to MPEP § 2113 [R - 1] regarding product-by-process claims. "The patentability of a product does not depend on its method or production. If the product in the product-by-process claim is the same as or obvious from a product or the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777, F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citation omitted)

Once the examiner provides a rationale tending to show that the claimed product appears to be same or similar to that of the prior art, although produced by a different process, the burden shifts to the applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218, USPQ 289, 292 (Fed. Cir. 1983)

Horikawa et al. disclose a ceramic honeycomb with an outer coating wall formed around an outer peripheral surface of a fired honeycomb body (Page 3, Line 41). The ceramic honeycomb is fired before removing the peripheral portion (Page 3, Lines 33 - 35).

24. In regard to claim 48, like Applicant, Horikawa et al. disclose a honeycomb body comprising grooves on its periphery and an outer coating (peripheral wall) covering said grooves, as discussed above for claim 1. The wall formed from the outer coating is formed after firing, as discussed for claim 47. Considering Horikawa et al. disclose a honeycomb body manufactured by a similar process

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as claimed by Applicant, it would be reasonable to believe the isostatic strength of the honeycomb disclosed by Horikawa et al. would also be 1.5 MPa or more.

25. In regard to claim 50, Horikawa et al. disclose the production of a ceramic honeycomb body used for removing particulates from diesel engines (Page 2, Lines 1 - 4).

26. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horikawa et al., in view of Montierth (U.S. Patent No. 4,416,675).

In regard to claim 51, Horikawa et al. discloses the addition of pore forming agent, such as graphite, starch powder and sawdust to a cordierite honeycomb body (Page 3, Lines 10 - 13). However, they are silent in regard to the cell wall porosity and average pore size. Montierth discloses a cordierite honeycomb body with a porosity of 30 - 70% and a pore diameter of 20 - 60 μm (Col. 9, Lines 13 - 20) is "sufficient to enable the contaminated fluid to flow through...while preventing at least a significant portion of the solid particulate in the fluid from passing completely through the thin walls and through the outlet end face of the filter" (Col. 2, Lines 40 - 50). Therefore, based upon the teachings of Montierth, it would have been obvious to one of ordinary skill in the art at the time of the invention that a cordierite honeycomb, such as that disclosed by Horikawa, would achieve optimum filtration of solid particulates when the cell walls have a porosity between 30% and 70% with a pore diameter of 20 - 60 μm .

27. Claims 28 – 32, 36, 37, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horikawa et al., in view of Nishimura et al. (JP 2001-046886).

Examiner has used U.S. 6,696,131 B1 as an English language equivalent for JP 2001-045886 herein.

28. In regard to claims 28 - 29, 31 - 32, Horikawa et al. is silent in regard to stress release portions (voids) in the peripheral wall formed on the outer surface of the honeycomb. However, Nishimura et al. disclose a plurality of slits formed in the outer wall of a ceramic honeycomb. These slits correspond to Applicant's "stress release portions at least partially in said peripheral wall layer." These slits provide thermal shock stress release at many locations and therefore improve thermal shock resistance (Col. 2, Lines 41 - 44). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the slits disclosed by Nishimura et al. into the peripheral wall disclosed by Horikawa et al. because slits improve the thermal shock resistance to the honeycomb.

29. In regard to claim 30, Nishimura et al. disclose slits within the wall extending the full length of the wall (Figure 1).

30. In regard to claim 36, Examiner directs Applicant to the discussion of claim 33 above.

31. In regard to claim 37, Examiner directs Applicant to the discussion of claim 34 above.

Allowable Subject Matter

32. Claims 38 – 42, 44, 52, and 53 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Arguments

33. Applicant argues, "...one distinguishing feature of amended claim 1 is that the stress release portions are voids provided at least partially between the peripheral wall layer and the grooves, a feature which is different from and not suggested by Kotani" (8/11/2008 remarks, page 16).

34. Applicant's argument with respect to claim 1 has been considered but is moot in view of the new ground(s) of rejection.

35. Applicant argues another distinguishing feature from Kotani et al. is "the thermal expansion coefficient of the peripheral wall layer (not in a radial direction) is smaller than that of the cell walls in a radial direction" (8/11/2008 remarks, page 16).

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36. Applicant's arguments with respect to the above argument have been fully considered and are persuasive. The rejection of claims 38 – 42 over Kotani et al. has been withdrawn.

37. Applicant argues, "Kotani teaches that ceramic fibers comprise amorphous silica alumina (claim 5 thereof), which is different from the amorphous silica particles of the invention of the amended claim 52. Thus, the distinguishing features of claim 52 are different than those disclosed in Kotani" (8/11/2008 remarks, page 19).

38. Applicant's arguments with respect to the above argument have been fully considered and are persuasive. The rejection of claims 38 – 42 over Kotani et al. has been withdrawn.

39. Applicant argues, "the subject matter of claim 34 (amended old claim 7) is directed to the number of grooves having said voids between the peripheral wall layer and the number of grooves is 5% or more of the number of the total of the grooves in the ceramic honeycomb structure, where the stress release portions are voids provided between the peripheral wall layer and the grooves. Kotani is silent regarding such limits" (8/11/2008 remarks, page 20).

40. Applicant's arguments with respect to claims 34 and 41 have been considered but are moot in view of the new ground(s) of rejection.

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41. Applicant argues, "a major distinguishing feature lies in removing a peripheral wall and nearby cell walls before firing" (8/11/2008 remarks, page 22).
42. Applicant's argument with respect to claim 43 has been considered but is moot in view of the new ground(s) of rejection.
43. Applicant argues the advantages to the specific porosity and pore sizes in the cell walls of the honeycomb of their invention (8/11/2008 remarks, pgs 23 – 25).
44. Applicant's argument with respect to claim 51 has been considered but is moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - F 8:30 - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

NICOLE T. GUGLIOTTA
Examiner
Art Unit 1794